

ABSTRACT

Technological growth of mobile wireless communications in modern world is going faster and immeasurable, so that a lot of emerging the new technology standard and sophisticated progressively. One of the technology is WIMAX (Worldwide Interoperability For Microwave Access) which operate at frequency 2.3 GHz, 2,5 GHz, and 3,5 GHz. The antenna which made in this final project operate on frequency 2,5 GHz which have space required frequency (2500 – 2690) MHZ, so that bandwidth required at RF level is about 190 MHZ

This final project developed a feeding method for microstrip antenna which called electromagnetically coupled (EMC). By using EMC, the undesirable radiation become smaller and also offers wideband characteristic without some network matching. The EMC feeding method earns to overcome feebleness from conventional microstrip antenna which has narrow bandwidth characteristic. Design of this microstrip antenna use method EMC with structure of feeder L-Strip. Ansoft HFSS 9.2 was used as the simulator software at this final project.

Prototype are made according to the model of simulation and the result which is obtained from the frequency measurement at $VSWR \leq 2$, that is frequency range at (2493,37 – 2695,5) MHZ. The radiation pattern of the antenna is unidirectional and also its polarization is elliptical polarized . The available Gain of this antenna are able reach untill 8,19 dBi.

Key word : Microstrip antenna, WIMAX, Electromagnetically Coupled (EMC)